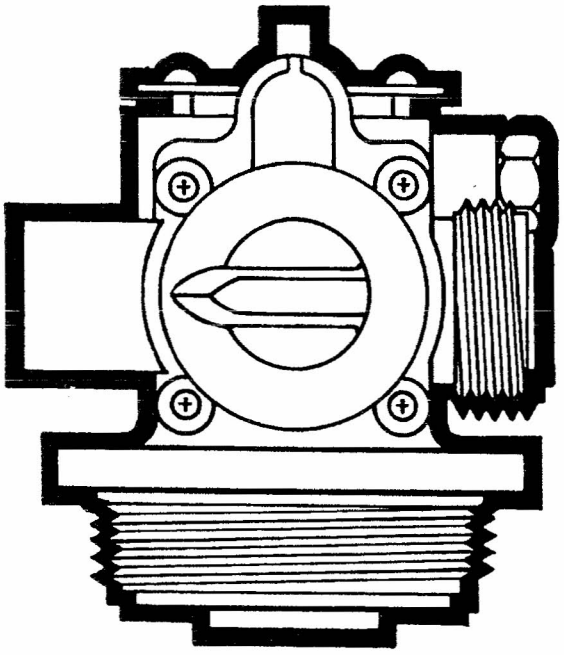
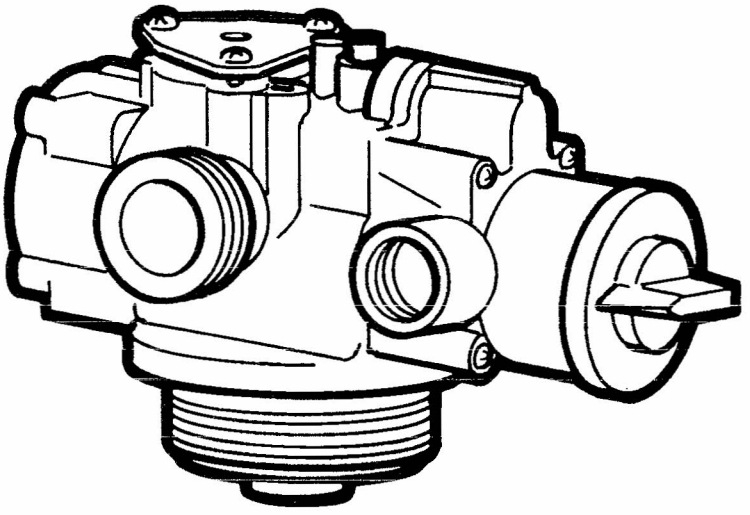
Erie

WATER CONDITIONING
CONTROLS

542-030 VALVE





SERVICE MANUAL

Assembly:

1. Cut the top of the distributor tube 1/2 inch below the top of the resin tank threads.
2. Chamfer the top of the tube to prepare it for insertion into the control valve.
3. Verify that the control is equipped with the correct tank o-ring and injector type.
4. Install the control valve onto the distributor tube.
5. Grip the control valve body and turn control into the resin tank.

Installation:

General Information

1. When facing the front of the control the inlet is to the right and the outlet is to the left.
2. The system pressure must be between 20 psi and 120 psi.
3. If the system pressure is greater than 120 psi a pressure reducing valve must be installed.
4. The unit must be installed in accordance with local codes.
5. Do not over tighten connections.

Drain Line Connection

1. The drain line I.D. must be at least 1/2 inch.
2. Teflon tape should be used when installing the drain fitting into the control valve.
3. The drain line must be free of kinks.

Fitting Kit Connection

1. DO NOT use Teflon tape when connecting the fitting kits to the control valve.
2. If the fitting kit provides a sweat connection, care must be taken to prevent the Noryl nut from melting.
3. Place a wet rag over the copper tube and the Noryl nut prior to heating the tube.

Start Up:

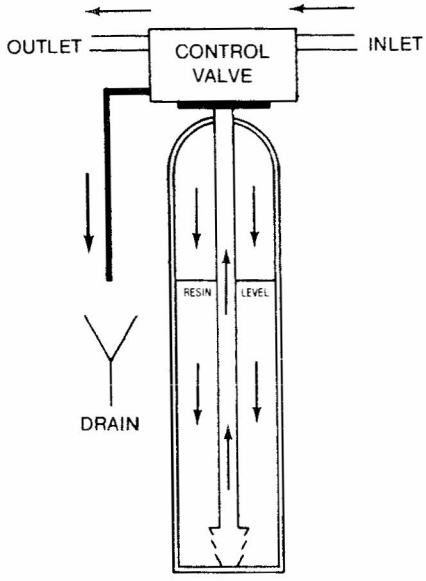
1. Insure that the bypass is secured in the "bypass" position.
2. Verify that the control valve is in the service position.
3. Open all plumbing connections to allow the free flow of water to the unit.
4. Slowly shift the bypass valve to the service position.
5. Allow the water to completely fill the resin tank.
6. Open a tap and allow the water to run until all of the air is removed from the system.
7. Once all of the air is removed, close the tap.
8. Manually advance the control valve to the Backwash position and allow water to flow to drain. *
9. Manually return the control valve back to the service position.

*** Note: The timer knob must be turned past the 20 minute selection on the time dial to ensure proper transfer to the backwash cycle.**

Operation:

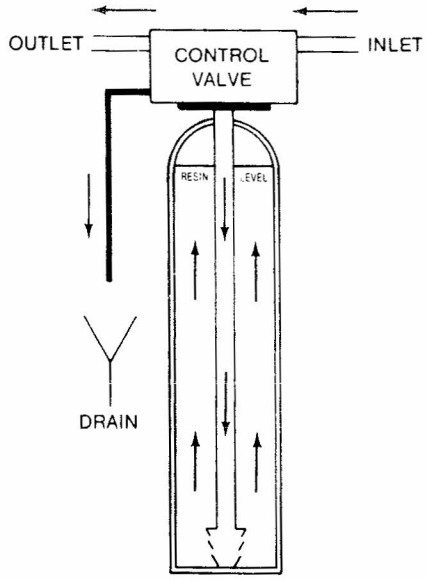
1. To initiate a backwash, turn the twist timer knob to the desired time.
2. Be sure to turn the timer past the 20 minute mark before setting.

Cycle Flow Diagrams



SERVICE

The service cycle position directs untreated water to flow down through the filter media in the mineral tank and up through the riser tube. The water is conditioned when passing through the media.

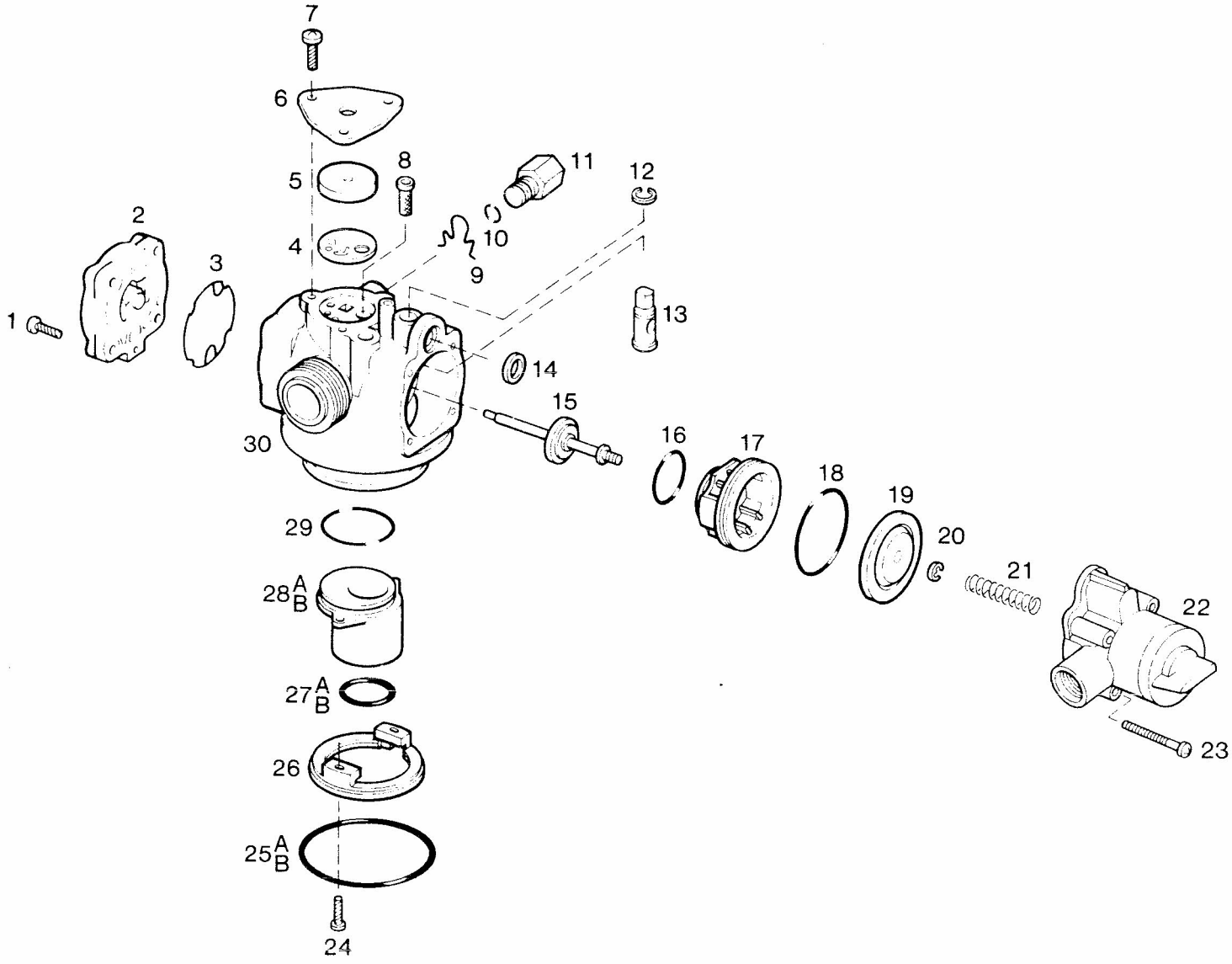


BACKWASH

The backwash cycle position directs water to flow down through the riser tube and up through the filter media and to drain. Foreign material and media fines are flushed from the mineral tank during this cycle to prepare the media for filtering.

PARTS LIST

ITEM	P/N	DESCRIPTION	QTY
1.	15-88	Screw, Backcap	4
2.	541-207	Backcap, 3 Cycle	1
3.	541-206	Seal, Backcap	1
4.	541-325	Gasket, Injector	1
5.	428-_	Injector (Specify Size)	1
6.	541-221	Cover Plate, Injector	1
7.	15-89	Screw, Injector Mount	3
8.	413-13	Filter Screen, Injector	1
9.	541-254	Spring Clip	1
10.	186-111-N	O-Ring, Plug	1
11.	541-273	Plug	1
12.	19-19	C-Clip, Backwash Flow Adjuster	1
13.	541-243	Backwash Flow Adjuster w/o-rings	1
14.	529-244	Gasket, Cross Over Port	1
15.	541-244	Body Stem Assembly	1
16.	185-024-1	O-Ring (Small), Seat Insert	1
17.	541-204	Seat Insert	1
18.	185-028-12	O-Ring (Large), Seat Insert	1
19.	541-256	Main Diaphragm	1
20.	19-3	C-Clip, Main Diaphragm	1
21.	516-221	Return Spring, Main Diaphragm	1
22.	541-290-11	2 Hr. Timer Assembly	1
23.	15-87	Screw, Timer Mount	4
24.	15-90	Screw, Adapter Ring	2
25A.	185-231-1	O-Ring, Structural Tank	1
25B.	186-136-N	O-Ring, Park Tank	1
26.	541-232	Adapter Ring	1
27A.	185-211-1	O-Ring, 13/16" Riser Adapter	1
27B.	185-214-1	O-Ring, 1.050" Riser Adapter	1
28A.	541-205	13/16" Riser Adapter	1
28B.	541-218	1.050" Riser Adapter	1
29.	185-029-1	O-Ring(Outside), Riser Adapter	1
30.	541-257-1	Valve Body & Seal	1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Troubleshooting Guide:

Symptom / Cause	Solution
1. Unit Fails To Cycle	
A. Low inlet pressure.	A. Verify that the service inlet pressure is a minimum of 20 psi.
B. Drain line is restricted.	B. Insure that the drain line is free of kinks. Cycle the control to backwash and verify flow rate.
C. Main diaphragm is torn.	C. Replace the diaphragm. Follow the procedure detailed in the Parts Replacement section of this manual.
D. Faulty timer assembly.	D. Replace timer assembly. Follow the procedure detailed in the Parts Replacement section of this manual.
E. Body stem assembly worn.	E. Replace body stem assembly. Follow the procedure detailed in the Parts Replacement section of this manual.
2. Unconditioned Water To Service	
A. The bypass valve is open or faulty.	A. Close the bypass valve.
B. Excessive water usage.	B. Check regeneration frequency.
C. Unit not cycling.	C. See Symptom/Cause #4.
D. Loss of filter media.	D. See Symptom/Cause #1.
E. Change in raw water.	E. Test the water.
F. Leak at the distributor tube.	F. Verify that the distributor tube is seated correctly and is not cracked.
3. Loss Of Resin	
A. Leak at the distributor tube.	A. Verify that the distributor tube is seated correctly and is not cracked.
B. Backwash control improperly adjusted.	B. Verify the backwash flow.
4. Continuous Flow To Drain	
A. Drain seat worn.	A. Clean or replace the drain seat. Follow the procedure detailed in the Parts Replacement section of this manual.
B. Timer assembly stalled.	B. Replace the timer assembly. Follow the procedure detailed in the Parts Replacement section of this manual.
5. Loss Of Water Pressure	
A. Media Bed Fouled	A. Verify backwash flow rate and/or backwash more frequently.
B. Lower distributor basket crushed.	B. Replace the basket and verify that the distributor is cut 1/2 inch below the top of the tank threads.

Parts Replacement:

General Information

Familiarize yourself with the parts replacement procedures and component parts thoroughly before attempting any repair.

Insure that the unit is in the bypass position and relieve the system pressure before attempting any repair procedure.

Required Tools

The following tools are required to perform routine maintenance on this control valve.

Phillips Screwdriver
Needle Nose Pliers
Adjustable Wrench
Standard Screwdriver

Timer Assembly Replacement

1. Place the bypass valve into the "bypass" position.
2. Relieve the system pressure.
3. Remove the four (4) head mounting screws.
4. Lift the timer assembly away from the valve body.
5. Follow these steps in reverse to re-install the timer assembly.

Note: Prior to reinstatement insure the main return spring is located over the main diaphragm.

Main Diaphragm Replacement

1. Place the bypass valve into the "bypass" position.
2. Relieve the system pressure.
3. Remove the four (4) head mounting screws.
4. Lift the timer assembly away from the valve body.
5. Remove the c-clip from the center of the diaphragm.
6. Lift the diaphragm away from the body stem assembly.
7. Follow these steps in reverse to re-install the main diaphragm.

Note: Prior to re-installment insure the main return spring is located over the main diaphragm and the outside edges of the main diaphragm are tucked into the valve body.

Body Stem Assembly Replacement

1. Place the bypass valve into the "bypass" position.
2. Relieve the system pressure.
3. Remove the four (4) head mounting screws.
4. Lift the timer assembly away from the valve body.
5. Remove the c-clip from the center of the diaphragm.
6. Lift the diaphragm away from the body stem assembly.
7. Remove the Seat Assembly.
8. Lift out the body stem assembly.
9. Inspect the center check disc rubber seal for wear. Clean or replace if necessary.
10. Re-install the body stem assembly.
11. Lightly lubricate the seat assembly o-rings with a Dow 111 Silicone based lubricant.
12. Re-install the seat assembly, insure that one of the two (2) flats is facing towards the top of the valve body.
13. Re-install main diaphragm and timer assembly.

Drain Seat Replacement

1. Place the bypass valve into the "bypass" position.
2. Relieve the system pressure.
3. Disconnect the drain fitting from the control valve drain outlet.
4. Use a large standard screwdriver to remove the drain seat. Turn out counter-clockwise.
5. Prior to installing the drain seat, lubricate the o-ring(s) with dish soap.
6. Turn in the drain seat, until the fitting becomes bottoms out.
7. To properly align the drain seat with the drain paddle back out seat four (4) full turns.
8. Pressurize the system and check drain for leaks.

Note: After backing out the drain seat the seat may still require minor adjustment to eliminate leaks. Turn the seat in or out the until the leak to drain stops.

Backwash Adjustment Valve Replacement

1. Place the bypass valve into the "bypass" position.
2. Relieve the system pressure. Remove the four (4) head mounting screws.
4. Lift the timer assembly away from the valve body.
5. Remove the c-clip from the center of the diaphragm.
6. Lift the diaphragm away from the body stem assembly.
7. Remove the seat assembly.
8. Disconnect the large c-clip located on top of the backwash adjustment valve.
9. Press the backwash adjustment valve down and out through the valve body assembly.
10. Inspect the o-rings on the valve for wear. Clean or replace the valve assembly if necessary.
11. Lightly lubricate the o-rings with a Dow 111 Silicone based lubricant.
12. Follow these steps in reverse to re-install the backwash adjustment valve.

Riser Replacement

1. Place the bypass valve into the "bypass" position.
2. Relieve the system pressure.
3. Disconnect the unit from the bypass connections.
4. Remove the unit from the resin tank.
5. Turn out the upper distributor basket from the unit adapter ring.
6. Remove the two (2) adapter hold down screws, and lift away the adapter ring.
7. Separate the riser assembly from the valve body.
8. Clean the riser o-rings and wipe out the valve body cavity.
9. Use a Dow 111 Silicone based lubricant to lightly lubricate the riser o-rings and the valve body cavity.
10. Follow these steps in reverse to re-install the riser assembly.

NOTES

NOTES

Conversion Information:

Length:

1 mile = 1609 m
1 yd = 0.9144 m
1 ft = 0.308 m
1 in = 25.4 mm
1 mil = 0.0254 mm

1 km = 0.621 miles
1 m = 1.093 yd
1 m = 3.28 ft
1 cm = 0.3937 in
1 mm = 39.37 mil

Area:

1 yd^2 = 0.8361 m^2
1 ft^2 = 0.0929 m^2
1 in^2 = 6.45 cm^2

1 m^2 = 1.196 yd^2
1 m^2 = 10.764 ft^2

Temperature:

1 Degree Celcius = (('F-32)*5)/9

1 Degree Farenheit = ((9*'C)/5)+32

Volume:

1 ft^3 = 28.318 liters
1 liter = 0.03532 ft^3

1 Gal. US = 3.785 liters
1 liter = 0.2642 Gal. US

Pressure:

1 psi = 6894.76 Pa
1 psi = 0.06895 bar
1 psi = 51.715 mm Hg

1 Pa = .000145 psi
1 bar = 14.504 psi
1 mm Hg = 0.0193 psi

Velocity:

1 US Gal/min. = 3.785 liters/min.
1 US Gal/min. =227.1 liters/hr
1 US Gal/min. = 0.227 m^3/hr

1 m^3/hr = 4.403 US Gal/min.
1 liter/hr = 0.0044 US Gal/min.

Weight:

1 lb. = 0.4536 kg
1 kg = 2.2046 lb.

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